JOURNAL OF THE AMERICAN STATISTICAL ASSOCIATION

CONTENTS OF VOLUME 36

THE 102ND ANNUAL MEETING: PROGRAM, 123; MINUTES, 131; PAPERS 1–44, 50–115, 167–247, 265–274, 283–292, 361–400

ARTICLES 1, 167, 329, 465

NOTES AND DISCUSSIONS 299, 429, 539

BOOK REVIEWS 145, 303, 436, 548

PUBLICATIONS RECEIVED 162, 325, 460, 580

MEMORIAL NOTES 116, 120, 543, 545, 546, 547

REPORTS AND OFFICIAL NOTICES: REPORT OF THE BOARD OF DIRECTORS, 132; REPORTS OF THE SECRETARY, THE TREASURER AND THE AUDITORS, 136–141; LIST OF COMMITTEES AND REPRESENTATIVES, 142–144; COMMITTEE ON NOMINATIONS, 435.

ARTICLES, NOTES AND DISCUSSIONS

ALGER, P. L. The Importance of the Statistical Viewpoint in High Production Manufacturing 50

BAKER, G. A. Linear Regression When the Standard Deviations of Arrays Are Not All Equal 500

BERKSON, JOSEPH. Comments on Dr. Madow's Note, *I* 539

BERKSON, JOSEPH. A Punch Card Designed to Contain Written Data and Coding 535

BINGHAM, M. D. A New Method for Obtaining the Inverse Matrix . . 530

BOATWRIGHT, John W. Principles and Procedures for Putting Across Business Statistics Reports to Executives 219

BRANDT, A. E. The Relation Between the Design of an Experiment and the Analysis of Variance 283

BROOKNER, R. J. A Note on the Mean as a Poor Estimate of Central Tendency 410

BROWN, THEODORE H. Business Approaches to Rearmament Production Control 27

BRUNSMAN, HOWARD G. The Housing Census of 1940 393

COLLINS, W. T., see Walker, Q. Forrest

COMRIE, L. J. On the Calculation of Correlation Coefficients with Modern Calculating Machines, *I* 429

CROXTON, FREDERICK E. Robert Emmet Chaddock, 1879–1940 . . . 116

CROXTON, FREDERICK E. Toward Standardized Symbols for Basic Statistical Concepts 426

DAVIES, G. R., and SMITH, R. H. Probabilities in Logarithmic Skewed Distributions 493
DEAN, JOEL, and WISE, MARY HILTON. An Appraisal of Index Numbers of Prices Farmers Pay 210
DEMING, W. EDWARDS, and GEOFFREY, LEON. On Sample Inspection in the Processing of Census Returns 351
DEMING, W. EDWARDS, and STEPHAN, FREDERICK F. On the Interpretation of Censuses as Samples 45
DENNIS, SAMUEL J. Housing in Relation to National Defense 36
DUNN, HALBERT L. Problems Concerning the Availability of Census Data . 240
DUNN, HALBERT L. Raymond Pearl, 1879–1940 120
DWYER, P. S. On the Calculation of Correlation Coefficients with Modern Calculating Machines, *II* 429
ECKLER, A. ROSS. Employment and Income Statistics 381
EDWARDS, ALBA M. Occupation and Industry Statistics 387
EZEKIEL, MORDECAI, and WYLIE, KATHRYN H. Cost Functions for the Steel Industry 91
FUNKHOUSER, RICHARD L. Membership of the American Statistical Association on Its Hundredth Anniversary 329
GALBRAITH, VIRGINIA L., and THOMAS, DOROTHY S. Birth Rates and the Interwar Business Cycles 465
GEARY, R. C. Comments on Dr. Madow's Note, *II* 541
GEOFFREY, LEON, See Deming, W. Edwards.
HAUSER, PHILIP M. The Use of Sampling in the Census 369
HAYFORD, F. LESLIE. An Inquiry into the Nature and Causes of Statisticians 1
HAYFORD, F. LESLIE. Roland Post Falkner, 1866–1940 543
HERSEY, ARTHUR B. Sources and Uses of Corporation Funds 265
HIGGINS, D. E., see Walker, Q. Forrest.
JOHNSON, NORRIS O. Federal Reserve Bank of New York Indexes of Production and Trade 423
JONES, HOWARD L. The Use of Grouped Measurements 525
JOY, ARYNESS. The Meaning of Unemployment Statistics 167
JULIBER, GUSTAVE S. Relation Between Seasonal Amplitudes and the Level of Production—An Application to the Production of Steel Ingots . 485
KOZLIK, ADOLF. The Use of Per Capita Figures for Demand Curves . . 417
LANG, RICHARD O. Problems of Statistical Control—Military Aspects . 11
LEWIS, H. GREGG. On the Distribution of the Partial Elasticity Coefficient. 413
LEWIS, H. GREGG. The Nature of the Demand for Steel 110
LOVE, JOHN W. How a Newspaperman Likes Statistics Presented . . 233
MCINTYRE, FRANCIS. Wholesale Price Indexes 185
MOORE, GEOFFREY H., see Wallis, W. Allen.
MOSAK, JACOB L. Some Theoretical Implications of the Statistical Analysis of Demand and Cost Functions for Steel 100
MOWBRAY, A. H. Observation on Correlation Analysis 248
MYERS, HOWARD B. Dynamics of Labor Supply 175
MYERS, ROBERT J. The Validity and Significance of Male Net Reproduction Rates 275
NATHAN, ROBERT R. Problems of Statistical Control—Economic Aspects. 18

PALMER, GLADYS L. Some Considerations Involved in Appraising the Adequacy of Occupational Statistics 61
PHELPS, ROSWELL F. Sumner B. Pearmain, 1859–1941 545
REEDE, ARTHUR H. Adequacy of Employment Statistics 71
ROBINSON, LELAND REX. Corporate Earnings on Share and Borrowed Capital in Percentages of Gross Income (1918–1940) 253
ROSS, FRANK A. Gusztav Thirring, 1861–1941 547
SANDOMIRE, MARION M. Accumulating Cubes with Punch Cards . . . 507
SAYRE, ROBERT A. Cost of Living Indexes 191
SHRYOCK, HENRY S., JR. General Population Statistics 376
SIEGEL, IRVING H. The Difference Between the Paasche and Laspeyres Index-Number Formulas 343
SIEGEL, IRVING H. Further Notes on the Difference Between Index-Number Formulas 519
SIMON, LESLIE E. On the Initiation of Statistical Methods for Quality Control in Industry 53
SMITH, HERBERT G. Some Practical Uses for Hyperbolic Grids . . . 293
SMITH, R. H., see Davies, G. R.
SOLTERER, J. A Sequence of Historical Random Events: Do Jesuits Die in Three's? 477
SOMERS, HERMAN M. Adequacy of Data in the Field of Public Aid . . 81
STEPHAN, FREDERICK F., see Deming, W. Edwards
STONER, PAUL MATTHEW. Fitting the Exponential Function and the Gompertz Function by the Method of Least Squares 515
TAITEL, MARTIN. Price Indexes as Viewed from the Standpoint of the National Defense Program 201
THOMAS, DOROTHY S., see Galbraith, Virginia L.
TRUESDELL, LEON E. New Features of the 1940 Population Census . . 361
VICKREY, WILLIAM. The Effects of Federal Revenue Acts of 1938, 1939, and 1940 on the Realization of Gains and Losses on Securities: Comment . 431
VORMELKER, ROSE L. How the Librarian Would Like To Find Statistics . 225
WALKER, Q. FORREST. A Correction 122
WALKER, Q. FORREST, COLLINS, W. T., and HIGGINS, D. E. Rejoinder . 433
WALLIS, W. ALLEN, and MOORE, GEOFFREY H. A Significance Test for Time Series Analysis 401
WILLCOX, WALTER F. Josiah Charles Stamp, 1880–1941 546
WISE, MARY HILTON, see Dean, Joel.
WOODBURY, ROBERT M. *Methods of Family Living Studies*, A Reply to the Review 299
WOODBURY, ROBERT M. Reply to the Rejoinder 302
WYLIE, KATHRYN H., see Ezekiel, Mordecai.
ZIMMERMAN, CARLE C. *Methods of Family Living Studies*, Rejoinder . . 300

BOOK REVIEWS

ACTUARIAL SOCIETY OF AMERICA AND ASSOCIATION OF LIFE INSURANCE MEDICAL DIRECTORS. *Blood Pressure Study, 1939*. Robert Gage. . . . 438
AITKEN, A. C. *Statistical Mathematics*. S. S. Wilks 148
ALBERT, A. ADRIAN. *Introduction to Algebraic Theories*. Franklin E. Satterthwaite 576

ALLEN, HARLAND H. *Whither Interest Rates?* Kenneth Lewis Trefftzs . . 156
ALTMAN, OSCAR L. *Savings, Investment, and National Income.* Solomon Fabricant 445
ARKIN, HERBERT, and COLTON, RAYMOND R. *Graphs, How To Make and Use Them.* Elmer C. Bratt 315
ARNESON, G., see James, C. L.
BALDERSTON, C. CANBY. *Wage Differentials: A Study of Wage Rates in Philadelphia Metal Plants.* H. M. Douty 451
BARNETT, GEORGE E., see Evans, George H., Jr.
BARNETT, PAUL. *Business-Cycle Theory in the United States, 1860–1900.* Elmer C. Bratt 572
BECKETT, GRACE. *The Reciprocal Trade Agreements Program.* E. Dana Durand 548
BENHAM, FREDERIC. *Great Britain Under Protection.* Clifford L. James . 317
BERNSTEIN, BLANCHE. *The Pattern of Consumer Debt, 1935–36.* Louis N. Robinson 322
BERTRAND, DANIEL, EVANS, W. DUANE, and BLANCHARD, E. L. *The Motion Picture Industry.* Evan B. Alderfer 565
BLAIR, JOHN M., and REESIDE, ARTHUR. *Price Discrimination in Steel.* Marion W. Worthing 566
BLANCHARD, E. L., see Bertrand, Daniel.
BRANDT, KARL. *Whale Oil, An Economic Analysis.* Elmo Paul Hohman . 150
BRECHT, ARNOLD, and GLASER, COMSTOCK. *The Art and Technique of Administration in German Ministries.* Harry L. Franklin 442
BROWN, WILLIAM ADAMS, JR. *The International Gold Standard Reinterpreted, 1914–1934.* Henry H. Villard. 456
BYE, RAYMOND T. *An Appraisal of Frederick C. Mills' The Behavior of Prices.* Harold F. Greenway 145
CENSUS, U. S. BUREAU OF THE. *Maps of Selected Industries Reported at the Census of Manufactures, 1937.* Oscar L. Endler 318
CHAPMAN, JOHN M., AND ASSOCIATES. *Commercial Bank and Consumer Instalment Credit.* M. R. Neifeld 160
CHURCH, DONALD E. *Speed Methods of Statistics for Use in Business.* David Schenker. 149
CLARK, COLIN. *The Conditions of Economic Progress.* Paul H. Douglas . 443
CLINE, DENZEL C. *Michigan Tax Trends as Related to Agriculture.* Robert S. Ford 157
COLTON, RAYMOND R., see Arkin, Herbert.
CORNELL, FRANCIS G., see Mort, Paul R.
DAHLBERG, GUNNAR. *Statistical Methods for Medical and Biological Students.* Gaius E. Harmon 312
DAVENPORT, DONALD H., and GESELL, GERHARD A. *Families and Their Life Insurance.* J. Edward Hedges. 564
DEARLE, N. B. *The Labour Cost of the World War to Great Britain, 1914–1922.* Horst Mendershausen 154
DICKENS, Paul D., see Gilbert, Milton.
DOANE, ROBERT R. *The Anatomy of American Wealth.* Maxine Y. Sweezy . 569
EASTWOOD, R. PARKER. *Sales Control by Quantitative Methods.* Alfred N. Watson 454

ECKERT, W. J. *Punched Card Methods in Scientific Computation.* Francis McIntyre 314
EMERSON, HAVEN, and HUGHES, HARRIET E. *Population, Births, Notifiable Diseases, and Deaths, Assembled for New York City, N.Y.: 1866–1938.* Halbert L. Dunn 310
ESTEY, JAMES A. *Business Cycles: Their Nature, Cause, and Control.* Paul Barnett 571
EVANS, GEORGE H., JR., and BARNETT, GEORGE E. *Principles of Investment.* Melchior Palyi 556
EVANS, W. DUANE, see Bertrand, Daniel.
FABRICANT, SOLOMON, with assistance of SHISKIN, JULIUS. *The Output of Manufacturing Industries, 1899–1937.* V. S. Kolesnikoff 446
FOOD RESEARCH INSTITUTE, Stanford University. *Wheat Studies of the Food Research Institute,* Vol. XVII, Nos. 1, 2, 3, and 4. Roland S. Vaile . . 320
FOOD RESEARCH INSTITUTE, Stanford University. *Wheat Studies of the Food Research Institute,* Vol. XVII, No. 7. N. Jasny 554
GESELL, GERHARD A., and HOWE, ERNEST J. *Study of Legal Reserve Life Insurance Companies.* J. Edward Hedges 564
GESELL, GERHARD A., see Davenport, Donald H.
GILBERT, MILTON, and DICKENS, PAUL D. *Export Prices and Export Cartels.* Charles A. Welsh 561
GLASER, COMSTOCK, see Brecht, Arnold.
GLASSER, CARRIE. *Wage Differentials: The Case of the Unskilled.* H. M. Douty 155
GUTHRIE, JOHN A. *The Newsprint Paper Industry.* Gardner Ackley . . 448
HARDY, CHARLES O. *Wartime Control of Prices.* Dan Throop Smith . . 321
HAVEN, T. KENNETH. *Investment Banking Under the Securities and Exchange Commission.* Raymond W. Goldsmith 577
HOFFMAN, A. C. *Large-Scale Organization in the Food Industries.* Evan B. Alderfer 565
HOLTHAUSEN, DUNCAN MCC., in collaboration with MERRIAM, MALCOLM L., and NUGENT, ROLF. *The Volume of Consumer Instalment Credit, 1929–38.* Louis N. Robinson 457
HOWE, ERNEST J., see Gesell, Gerhard A.
HOWER, RALPH M. *The Preservation of Business Records.* Dorsey W. Hyde, Jr. 149
HUGHES, HARRIET E., see Emerson, Haven.
HUNT, PEARSON. *Portfolio Policies of Commercial Banks in the United States, 1920–1939.* Harold J. Heck and Alexander Wall 158
Huntington, Edward V. *Methods of Apportionment in Congress.* Churchill Eisenhart 568
JAMES, C. L., WELSH, E. C., and ARNESON, G. *Industrial Concentration and Tariffs.* Charles A. Welsh 561
JENSS, RACHEL M., and SOUTHER, SUSAN P. *Methods of Assessing the Physical Fitness of Children.* John R. Miner 309
KEIM, Walter G. *Geographical Differentials in Prices of Building Materials.* F. L. Carmichael 451
KELLEY, TRUMAN L. *Talents and Tasks, Their Conjunction in a Democracy for Wholesome Living and National Defense.* Martin F. Fritz . . . 307

KISER, LOUISE K., see Lorimer, Frank.
KREPS, THEODORE J. *Measurement of the Social Performance of Business.* Spurgeon Bell 559
LASORSA, GIOVANNI. *Statistica Economica con Riferimenti alla Organizzazione e alle Fonti.* Antonio Ciocco 313
LEWIS-FANING, E. *A Comparative Study of the Seasonal Incidence of Mortality in England and Wales and in the United States of America.* Halbert L. Dunn 152
LIFE INSURANCE MEDICAL DIRECTORS, ASSOCIATION of, see Actuarial Society of America.
LONG, CLARENCE D., JR., *Building Cycles and the Theory of Investment.* John R. Riggleman 316
LORIMER, FRANK, WINSTON, ELLEN, and KISER, LOUISE K. *Foundations of American Population Policy.* J. J. Spengler 305
LOTKA, ALFRED J. *Théorie analytique des associations biologiques. Deuxième partie.* Frederick F. Stephan 437
MCGILL, NETTIE PAULINE, and MATTHEWS, ELLEN NATHALIE. *The Youth of New York City.* Palmer O. Johnson 153
MARSH, LEONARD C. *Canadians In and Out of Work.* P. Sargant Florence . 303
MATTHEWS, ELLEN NATHALIE, see McGill, Nettie Pauline.
MERRIAM, MALCOLM L., see Holthausen, Duncan McC.
MERWIN, CHARLES L., JR., *Financial Characteristics of American Manufacturing Corporations.* Charles A. Bliss 563
MILLET, JOHN I. *Bank Audits and Examinations.* Kenneth L. Trefftzs . 558
MORT, PAUL R., and CORNELL, FRANCIS G. *American Schools in Transition.* Douglas E. Scates 573
NATIONAL RESOURCES COMMITTEE. *Urban Planning and Land Policies.* Homer Hoyt. 552
NOTESTEIN, FRANK W., see Stix, Regine K.
NUGENT, ROLF, see Holthausen, Duncan McC.
OTTE, HERMAN FREDERICK. *Industrial Opportunity in the Tennessee Valley of Northwestern Alabama.* Alfred H. Williams 151
PEACH, WILLIAM NELSON. *The Security Affiliates of National Banks.* Kenneth L. Trefftzs 557
PFIFFNER, JOHN M. *Research Methods in Public Administration.* George A. Graham 549
PLUMMER, WILBUR C., and YOUNG, RALPH A. *Sales Finance Companies and Their Credit Practices.* Harold L. Reed 459
REESIDE, ARTHUR, see Blair, John M.
SAULNIER, RAYMOND J. *Industrial Banking Companies and Their Credit Practices.* Harold L. Reed 459
SCHUT, M. J. *Tinrestrictie en tinprijs* (Tin restriction and tin price). Tjalling Koopmans. 319
SECURITIES AND EXCHANGE COMMISSION. *Statistics of American Listed Corporations.* William A. Spurr 578
SELLIN, THORSTEN. *The Criminality of Youth.* Barkev S. Sanders . . . 439
SHISKIN, JULIUS, see Fabricant, Solomon.
SIMON, LESLIE E. *An Engineers' Manual of Statistical Methods.* Eugene L. Grant 574
SIMS, LEWIS B. *The Scholarship of Junior Professional Appointees in the Government Service.* James C. Charlesworth 306

SLICHTER, SUMNER H. *Economic Factors Affecting Industrial Relations Policy in National Defense.* Francis M. Boddy 550
SNEDECOR, GEORGE W. *Statistical Methods Applied to Experiments in Agriculture and Biology.* C. H. Goulden 313
SOCIAL SECURITY BOARD. *Fiscal Capacity of the States, A Source Book.* J. P. Watson 450
SOCIAL SECURITY BOARD. *Old-Age and Survivors Insurance Statistics.* W. S. Woytinsky 308
SOUTHER, SUSAN P., see Jenss, Rachel M.
SPIEGEL, HENRY WILLIAM. *Land Tenure Policies at Home and Abroad.* Wilfred Malenbaum 455
SPURRIER, LEO. *Common Stocks and Bonds as Long-Term Investments.* Alfred Cowles 555
STAFFORD, PAUL TUTT. *Government and the Needy, A Study of Public Assistance in New Jersey.* Elizabeth W. Gilboy 304
STIGLER, GEORGE J. *Production and Distribution Theories, the Formative Period.* O. J. McDiarmid 570
STIX, REGINE K., and NOTESTEIN, FRANK W. *Controlled Fertility, An Evaluation of Clinic Service.* Margaret J. Hagood 309
TAITEL, MARTIN. *Profits, Productive Activities, and New Investment.* Solomon Fabricant 562
*TEMPORARY NATIONAL ECONOMIC COMMITTEE. *Statement on Life Insurance,* Monograph No. 28A. J. Edward Hedges 564
TEMPORARY NATIONAL ECONOMIC COMMITTEE. *Reports of the Federal Trade Commission,* Monograph No. 36. Evan B. Alderfer 565
TEMPORARY NATIONAL ECONOMIC COMMITTEE. *The Basing Point Problem,* Monograph No. 42. Marion W. Worthing 566
THOMAS, DOROTHY SWAINE. *Social and Economic Aspects of Swedish Population Movements, 1750–1933.* W. Lewis Abbott 551
TREASURY, DEPARTMENT OF THE, in cooperation with WORK PROJECTS ADMINISTRATION. *Statistics of Income Supplement Compiled from Federal Income Tax Returns of Individuals for the Income Years 1934 and 1936.* Donald W. Gilbert 444
TRIFFIN, ROBERT. *Monopolistic Competition and General Equilibrium Theory.* Lloyd G. Reynolds 146
TURNER, H. HAINES. *Case Studies of Consumers' Cooperatives.* Carl N. Schmalz. 553
WELSH, E. C., see James C. L.
WEST, CARL J. *Introduction to Mathematical Statistics.* Franklin E. Satterthwaite 575
WICKENS, DAVID L. *Residential Real Estate.* Ernest M. Fisher 452
WILLCOX, WALTER F. *Studies in American Demography.* Edwin B. Wilson . 436
WINSTON, ELLEN, see Lorimer Frank.
WORK PROJECTS ADMINISTRATION, see Treasury, Department of the.
YOUNG, RALPH A., see Plummer, Wilbur C.
ZIPF, GEORGE KINGSLEY. *National Unity and Disunity.* George A. Lundberg 440

* For Temporary National Economic Committee Monographs Nos. 2, 6, 7, 10, 12, 15, 28, 33, 35, 37, 41, and 43, see Davenport, Gilbert, Kreps, James, Taitel, Merwin, Gesell, Keim, Hoffman, Altman, Blair, and Bertrand.

BOOK REVIEWERS

ABBOTT, W. LEWIS, 551
ACKLEY, GARDNER, 448
ALDERFER, EVAN B., 565
BARNETT, PAUL, 571
BELL, SPURGEON, 559
BLISS, CHARLES A., 563
BODDY, FRANCIS M., 550
BRATT, ELMER C., 315, 572
CARMICHAEL, F. L., 451
CHARLESWORTH, JAMES C., 306
CIOCCO, ANTONIO, 313
COWLES, ALFRED, 555
DOUGLAS, PAUL H., 443
DOUTY, H. M., 155, 451
DUNN, HALBERT L., 152, 310
DURAND, E. DANA, 548
EISENHART, CHURCHILL, 568
ENDLER, OSCAR L., 318
FABRICANT, SOLOMON, 445, 562
FISHER, ERNEST M., 452
FLORENCE, P. SARGANT, 303
FORD, ROBERT S., 157
FRANKLIN, HARRY L., 442
FRITZ, MARTIN F., 307
GAGE, ROBERT, 438
GILBERT, DONALD W., 444
GILBOY, ELIZABETH W., 304
GOLDSMITH, RAYMOND W., 577
GOULDEN, C. H., 313
GRAHAM, GEORGE A., 549
GRANT, EUGENE L., 574
GREENWAY, HAROLD F., 145
HAGOOD, MARGARET J., 309
HARMON, GAIUS E., 312
HECK, HAROLD J., 158
HEDGES, J. EDWARD, 564
HOHMAN, ELMO PAUL, 150
HOYT, HOMER, 552
HYDE, DORSEY W., JR., 149
JAMES, CLIFFORD, L., 317
JASNY, N., 554
JOHNSON, PALMER O., 153
KOLESNIKOFF, V. S., 446
KOOPMANS, TJALLING, 319
LUNDBERG, GEORGE A., 440
MCDIARMID, O. J., 570
MCINTYRE, FRANCIS, 314
MALENBAUM, WILFRED, 455
MENDERSHAUSEN, HORST, 154
MINER, JOHN R., 309
NEIFELD, M. R., 160
PALYI, MELCHIOR, 556
REED, HAROLD L., 459
REYNOLDS, LLOYD G., 146
RIGGLEMAN, JOHN R., 316
ROBINSON, LOUIS N., 322, 457
SANDERS, BARKEV S., 439
SATTERTHWAITE, FRANKLIN E., 575, 576
SCATES, DOUGLAS E., 573
SCHENKER, DAVID, 149
SCHMALZ, CARL N., 553
SMITH, DAN THROOP, 321
SPENGLER, J. J., 305
SPURR, WILLIAM A., 578
STEPHAN, FREDERICK F., 437
SWEEZY, MAXINE Y., 569
TREFFTZS, KENNETH LEWIS, 156, 557, 558
VAILE, ROLAND S., 320
VILLARD, HENRY H., 456
WALL, ALEXANDER, 158
WATSON, ALFRED N., 454
WATSON, J. P., 450
WELSH, CHARLES A., 561
WILKS, S. S., 148
WILLIAMS, ALFRED H. 151
WILSON, EDWIN B., 436
WORTHING, MARION W., 566
WOYTINSKY, W. S., 308